Amendment and Response
Applicant: Kenneth Kay Smith et al.
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Title: SYSTEM FOR ERROR CORRECTION CODING AND DECODING

IN THE CLAIMS

Please cancel claims 5-7, 9, and 18-22.

Please amend claims 1, 2, 4, 8, 10-13, and 23 as follows:

WHAT IS CLAIMED IS:

1.   (Currently Amended) A system for error correction coding and decoding information, comprising:

first and second encoders each configured to encode the information, wherein the second encoder has a higher capability than the first encoder and wherein the first encoder generates first parity symbols and the second encoder generates second parity symbols, with a number of the second parity symbols being greater than a number of the first parity symbols; and

first and second decoders configured to recover the information, wherein the first decoder is configured to recover the information using the first parity symbols generated when the first encoder encodes the information, and provide an indication if the information cannot be recovered, and wherein the second decoder recovers the information encoded by the second encoder only if the first decoder cannot recover the information with the second decoder configured to recover the information using the second parity symbols generated when the second encoder encodes the information.

2.   (Currently Amended) The system of claim 1, wherein the information is encoded to produce a codeword by combining the information, the first parity symbols, generated when the first encoder encodes the information and the second parity symbols generated when the second encoder encodes the information.

3.   (Original) The system of claim 2, comprising:

a multiplexer configured to combine the information, the first parity symbols and the second parity symbols into the codeword.

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4.   (Currently Amended) The system of claim 1, wherein the information is encoded by combining the information, the first parity symbols, ~~generated when the first encoder encodes the information~~ and the second parity symbols generated when the second encoder encodes both the information and the first parity symbols.

5-7.   (Canceled)

8.   (Currently Amended) The system of claim ~~5~~4, wherein the second decoder is configured to recover the information by using second parity symbols generated when the second encoder encodes both the information and the first parity symbols~~, wherein the second decoder recovers the information only if the first decoder provides the indication~~.

9.   (Canceled)

10.   (Currently Amended) The system of claim ~~6~~1, wherein the second decoder comprises:
        a register configured to store the information and the second parity symbols; and
        a processor system configured to recover the information by using second parity symbols only if the first decoder provides the indication.

11.   (Original) The system of claim 1, wherein the first decoder recovers the information by using the first parity symbols to detect and correct any errors in the information.

12.   (Original) The system of claim 1, wherein the second decoder recovers the information by using the second parity symbols to detect and correct any errors in the information.

13.   (Currently Amended) A storage system having a system for error correction coding and decoding information, comprising:
        first and second encoders each configured to encode the information, wherein the first encoder applies first parity symbols and the second encoder applies second parity symbols

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which are greater in number than the first parity symbols to enable ~~can~~-locatinge and correcting a larger number of errors than the first encoder; and

first and second decoders configured to recover the information, wherein the first decoder acts first to recover the information and the second decoder acts second to recovers the information encoded by the second encoder only if the first decoder cannot recover the information, wherein the first and second encoders and the first and second decoders use an error correcting code.

14.   (Original) The system of claim 13, wherein the first and second encoders and the first and second decoders use a linear block code.

15.   (Original) The system of claim 14, wherein the linear block code is a cyclic redundancy check code.

16.   (Cancelled)

17.   (Original) The system of claim 13, wherein the first and second encoders and the first and second decoders use a burst-correcting code.

18-22. (Canceled)

23.   (Currently Amended) A method of error correction coding and decoding information, comprising:

generating a number of first parity symbols from the information;

generating a number of second parity symbols from the information, wherein the number of the second parity symbols is greater than the number of the first parity symbols;

combining the first parity symbols, the second parity symbols and the information into an encoded data block;

recovering the information from the encoded data block by first using the first parity symbols if the information can be recovered using the first parity symbols; and

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recovering the information from the encoded data block, after using the first parity symbols, by second using the second parity symbols only if the information cannot be recovered using the first parity symbols.

24.   (Original) The method of claim 23, wherein generating a number of the second parity symbols from the information includes generating the number of the second parity symbols from both the first parity symbols and the information.

25.   (Original) The method of claim 23, wherein recovering the information from the encoded data block using the first parity symbols includes detecting or correcting errors in the information which can be detected or corrected using the first parity symbols.

26.   (Original) The method of claim 23, wherein recovering the information from the encoded data block using the second parity symbols includes detecting or correcting errors in the information using the second parity symbols.

27.   (Original) The method of claim 23, wherein recovering the information from the encoded data block using the second parity symbols includes detecting or correcting errors in the first parity symbols and the information using the second parity symbols.

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